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The observers said the new Suzuki government will also seek a breakthrough in the current stalemated relations with the Soviet Union.

The new government will map out its Middle East policy on the occasion of the scheduled visit to Tokyo in January by Saudi Arabia's Crown Prince Fahd as its first top foreign guest, they added.

CSO: 4120/81

SOVIET ENVOY ON RELATIONS WITH JAPAN, PRC

OW031013 Tokyo KYODO in English 0940 GMT 3 Dec 81

[Text] Tokyo, 3 Dec (KYODO)--Soviet Ambassador to Tokyo Dmitriy Polyanskiy Thursday called on Japan to take the initiative in improving relations between the two countries.

Speaking at a seminar here, Polyanskiy said that Soviet-Japan relations constitute a substantial factor in the Far East.

He noted that 25 years have passed since the two nations restored diplomatic relations and said the development of good-neighborly relations would contribute to peace and security in the Far East and Asia as a whole.

Polyanskiy said, however, the process of creating an atmosphere of good-neighborhood concerns both countries.

"We hope that foresight and the understanding of its own interests will prevail in Japan," the ambassador said, adding:

"So far as the USSR is concerned, it is unchangeably in favor of true good-neighborly relations with Japan."

Polyanskiy said the Soviet Union has always called for normalization of its relations with china.

"It is our belief that there are no problems that cannot be solved between our two countries if there is goodwill," he said.

"Unfortunately," he said, "at present no change is seen in the policy of the Chinese leaders. Nevertheless, the Soviet people do not give up the hope that common sense will prevail in Beijing and that the relations between our two countries will enter a normal course."

CSO: 4120/81

ASDF COMPLETES OPERATIONAL TESTS OF F-15

Tokyo JPE AVIATION REPORT-WEEKLY in English No 546, 11 Nov 81 pp 7-8

[Text] The ASDF's Air Proving Wing has completed operational tests of two F-15J fighter aircraft, which started last May. The test results will be reported to the Air Staff Office by early December.

In the tests, the Air Proving Wing made 100 flights, including 10 for familiarization, 25 for testing flight characteristics, 15 for testing avionics, 25 for testing the radar warning system, and 20 for testing the data link.

Priority was given to the APR-4 radar warning system and the data link in the tests because the other matters had been tested fully by the U.S. Air Force before delivery of the two planes to Japan. The tests on the two priority items are believed to have produced satisfactory results.

The Air Proving Wing will continue to use the two F-15Js for further tests to solve operational problems and suggest possible modification. A hangar and noise suppressors for the two aircraft have already been completed. The noise suppressors can hold engine test noise within a range of 500 meters down to 70 decibels or less, enabling nighttime engine tests.

Meanwhile, an ad hoc F-15J squadron, to be organized in December, will start training of F-15J pilots with four F-15DJ trainers in April 1982. The ASDF's F-15 pilots will total 13 when the sixth and last group of trainees ends training in the United States soon. These pilots will become instructors for training student pilots in Japan.

Trainees will be selected from F-86, F-104J and F-4EJ pilots. A training syllabus for their shift to the F-15J is now in preparation.

The number of F-15DJ two-seat trainers will increase from four at the end of FY 1981 to six in FY 1982 and eight in FY 1983.

MSDF TO FIX SPECIFICATIONS FOR DDG, AS

Tokyo JPE AVIATION REPORT-WEEKLY in English No 546, 11 Nov 81 p 8

[Text]

The Maritime Self-Defense Force (MSDF) is to prepare basic specifications in early November for a 4,500-ton DDG guided missile destroyer and a 3,600-ton AS submarine tender, with construction starting by the end of FY 1981.

If the basic specifications are approved by the Minister for Defense (JDA Director-General) smoothly, constructors of the ships would be decided in mid-November.

The new DDG is designed for area defense missions as the major vessel of a sophisticated escort flotilla. Its equipment will include Harpoon antiship missiles and CIWS systems. The JDA has concluded a contract with the United States to purchase this equipment through the Foreign Military Sales channel. Its gas turbine powerplant will be a combination of the Rolls-Royce Marine Olympus and Spey engines which will be manufactured by KHI under license.

The new AS will be equipped with a deep submergence rescue vehicle (DSRV) to modernize submarine rescue operations. The DSRV is incorporated into the FY 1982 budget request.

Meanwhile, the MSDF is to start a fleet rehabilitation and modernization program for the destroyer Takatsuki in the current fiscal year. But the FY 1981 budget covers only purchase of new equipment, including Harpoon missiles and towed array surveillance systems. Test modification of the destroyer is planned for funding in FY 1982.

CSO: 4120/72

THREE FIRMS PREPARING BADGE PROPOSALS

Tokyo JPE AVIATION REPORT-WEEKLY in English No 547, 18 Nov 81 pp 3-4

[Text]

Nippon Electric Co. (NEC), Fujitsu Ltd. and Hitachi Ltd. have started preparation of proposals for a new BADGE air defense system for the Air Self-Defense Force (ASDF) after studying the ASDF's detailed requirements and reports drafted by the U.S. Air Force and Mitre Corp. The proposals will be submitted to the ASDF by late January.

The three firms are now vying for the BADGE contract on almost even terms, although NEC had demonstrated its superiority over the others by forming an alliance with Mitsubishi Electric Corp., Toshiba Corp., Oki Electric Industry Co. and Nippon Avionics Co. before the Japanese Defense Agency (JDA) requested the three firms' proposals last Aug. 7. NEC has built the existing BADGE system in cooperation with Hughes Aircraft Co.

The JDA has taken care to make the three contenders stand on even ground so that they can all propose low-cost systems. It has allowed system designers of the three companies to look into the entire BADGE system by visiting the Air Defense Command, radar sites and other facilities. It has also briefed the three firms' representatives on detailed requirements.

Due to the JDA efforts, NEC will not necessarily hold any superiority over Fujitsu and Hitachi. The JDA is expected to select, as the BADGE prime contractor, the company proposing the lowest cost and the best system.

The ASDF requirements demonstrate its intention to minimize the cost for the new BADGE construction program. Therefore, the value of the program is now estimated lower than the originally planned ¥700,000 million. The hardware alone is estimated at only ¥70,000 million.

The current BADGE system has been built and maintained by Nippon Avionics, a joint venture of NEC and Hughes, with the software provided by the U.S. company. The NEC/Hughes/C. Itoh & Co. group won the BADGE contract in competition with the Litton/Mitsubishi Electric/Fujitsu/Nissho Iwai group and the General Electric/Toshiba/Mitsui group.

The new BADGE system would have to depend on a U.S. firm for supply of the software, though the hardware will be manufactured domestically. NEC still maintains a tie-up with Hughes to win the new BADGE contract. Fujitsu has teamed up with General Dynamics and Hitachi with System Development.

CSO: 4120/72

OUTLINE OF KHI'S GAS TURBINE ENGINE PROGRAMS

Tokyo JPE AVIATION REPORT-WEEKLY in English No 547, 18 Nov 81 pp 5-6

[Text]

Kawasaki Heavy Industries Ltd. (KHI) is now manufacturing seven Rolls-Royce Marine Olympus TM3B and nine Tyne RM1C gas turbine engines ordered in FY 1979 for the Maritime Self-Defense Force's (MSDF) new DD and DE destroyers.

KHI will delivery four Olympus engines and as many Tynes to the Defense Agency in April 1982, two Olympuses and as many Tynes in June 1982 and one Olympus and three Tynes in March 1983. It had already completed delivery of three Olympuses and as many Tynes, ordered in FY 1978, last June.

KHI is also preparing for production of five Olympuses and four Tynes as ordered in FY 1980.

The Marine Olympus and the Marine Tyne were first adopted for a 2,900-ton DD and the Olympus for a 1,200-ton DE funded in FY 1977. The DD is powered by two Olympuses and as many Tynes, while the DE is equipped with one Olympus and a 6DRV diesel engine.

The MSDF plans to install a COGAG (combined gas turbine and gas turbine) system consisting of two Olympus and as many Marine Spey SM1A gas turbine engines in a 4,500-ton DDG guided-missile destroyer funded in FY 1981. KHI has already been named to manufacture this COGAG system.

As for aircraft engines, KHI is now manufacturing seven T53-K-13B engines, a T53 test stand and some J33/J80506 engines, all of which were ordered in FY 1980. Of the seven T53-K-13Bs, five will be completed by January 1982 and two by March 1982.

Industries Co., KHI is producing parts of 35 F100s and 15 T56s ordered in FY 1978. Their delivery will be completed by February 1982. It also received orders for parts of 90 F100s and 15 T56s in FY 1980 with delivery completion scheduled for February 1984.

In addition, KHI is manufacturing parts of Rolls-Royce RB211s and Lycoming engines for Boeing and other aircraft.

Overhaul work is now under way on 101 engines for delivery by the end of FY 1981.

KHI is also taking part in a program of the Engineering Research Association for Aero-jet Engines (ERAAE) for development of the FJR turbofan engine for an experimental STOL (short takeoff and landing) aircraft. In the current fiscal year, KHI was given a ¥1,310 million contract for fabrication of two FJR engines for delivery in May 1982 and March 1983. They will be installed in a C-1 transport modified into the experimental STOL aircraft. Another ¥1,703 million contract was awarded to KHI in the current fiscal year for tests of the FJR engine.

CSO: 4120/72

IHI DELIVERS FIRST XF-3-30 TO JDA

Tokyo JPE AVIATION REPORT-WEEKLY in English No 547, 18 Nov 81 pp 6-7

[Text]

Ishikawajima-Harima Heavy Industries Co. (IHI) delivered the first of the five XF-3-30 small turbofan engines for pre-flight rating tests (PFRT) to the JDA's Technical R&D Institute (TR&DI) in late October.

IHI and the TR&DI have been developing the XF-3 as a possible powerplant for the MT-X new intermediate trainer. Before the XF-3-30 test engine, IHI fabricated the XF-3-1 as the first demonstrator engine in FY 1975 and the XF-3-20 as the second one in FY 1978.

The five XF-3-30s were ordered in FY 1980. Following the first XF-3-30, the second one will be delivered to the TR&DI in November, the third in January 1982, the fourth in April and the fifth in June. The pre-flight rating tests are to start in November with the first one.

The TR&DI plans to order four more XF-3-30s from IHI for PFRT in the current fiscal year. Negotiations on the order are now under way between the JDA's Central Procurement Office and IHI.

Of the nine XF-3-30 engines, the first one is designed for durability tests, the second for over-rotation tests, the third for distortion tests, the fourth for airborne tests on a flying test bed aircraft, the fifth for altitude flight tests, the sixth for flying test bed tests, the seventh for altitude flight tests, the eighth for foreign object damage tests, and the ninth for a 60-hour running test.

Although these tests are scheduled to be completed by October 1983, the TR&DI intends to end the key part of the tests before October 1982 when a decision on the MT-X engine will be made. IHI and the TR&DI hope that the JDA will adopt the XF-3, which features low bypass ratio, light weight, fuel efficiency and low noise.

If the XF-3 is selected as the MT-X engine, the JDA would seek funding for fabrication of five XF-3 engines as well as four MT-X airframes in FY 1983. The five are planned for final durability and environmental tests before mass production.

CSO: 4120/72

MILITARY

GSDF MAY PROCURE 40 TAN-SAMS UNDER NEW MTDP

Tokyo JPE AVIATION REPORT-WEEKLY in English No 547, 18 Nov 81 p 7

[Text]

The Ground Self-Defense Force (GSDF) is expected to seek funding for 40 batteries of Tan-SAM short-range surface-to-air missiles for air defense of divisional areas under the FY 1983-87 Medium-Term Defense Program (MTDP).

The GSDF's introduction of the domestically developed Tan-SAM started in the current fiscal year with four batteries funded for training. For FY 1982, it has requested two batteries for training and six for front-line deployment. Tan-SAMs for the FY 1983-87 MTDP, which will be prepared next year, will mainly replace the 75mm antiaircraft guns for air defense of GSDF divisions.

The GSDF is also expected to request funding for about 220 sets of General Dynamics Stinger portable SAMs for air defense of tank and artillery units under the new MTDP. Introduction of the portable SAM coincided with that of the Tan-SAM in FY 1981. Following the first 14 sets for training funded in the current fiscal year, the service has requested 46 sets for front-line units for FY 1982.

The GSDF expects to subject the Stinger portable SAM to domestic license production depending on the procurement amount to be stipulated in the new MTDP.

CSO: 4120/72

SCIENCE AND TECHNOLOGY

SIX DEFENSE CONTRACTORS' SECRET BUSINESS ALLIANCE ON BADGE SYSTEM

Tokyo ZAIKAI in Japanese Vol 29 No 19, 8 Sep 81 pp 100-103

[Text] It apparently was something that not even the Japan Defense Agency (JDA) had foreseen.

The idea that the Nippon Electric Company (NEC) and Mitsubishi Electric Corporation, which had been engaged in a furious battle over who would become the prime contractor for the next Base Air Defense Ground Environment (BADGE-X), a system predicted by some to cost as much as 300 billion yen, would join hands at the stage that the performance specifications were passed out was something that had never been considered.

No one in his wildest dreams had thought that these two would be joined also by Toshiba Corporation and Oki Electrical Industry Company and that these four then would attempt to form a "six-company alliance" with Hughes Corporation of the U.S. and Japan Avionics Corporation (a joint venture of Huges and NEC).

The JDA was prepared to give the performance specifications for the BADGE-X--a system of computers and telecommunications--to the six [sic] domestic computer companies possessing system design capabilities: Fujitsu Ltd., Hitachi Ltd., NEC, Toshiba, and Oki Electrical.

The performance specifications were given to Fujitsu, Hitachi, and NEC on the afternoon of 7 August, but the JDA had notified all of the companies the previous day, "the performance specifications will be presented tomorrow, so please be there."

Mitshubishi Electric, of course, was also notofied by the JDA, but it had already decided by that time to join hands with NEC. Therefore, First Operations Division Chief Takeshi Abe, who is in charge of business involving defense-related equipment, visited the JDA on the morning of 7 August and explained the situation: Mitsubishi would "do it with NEC."

Toshiba and Oki Electrical said the same.

So, there was this flurry of activity, and the JDA ended up presenting its performance specifications to only three companies.

Hearing of the formation of a six-company alliance centering on NEC and Mitsubishi, the leader of a certain defense equipment manufacturer revealed these thoughts:

"Quite frankly, I was surprised. Although it is still only the stage of presenting performance specifications, one gets the feeling that 'the game is over,' I say this because the present BADGE system is being handled by the three companies of NEC, Hughes, and Japan Avionics; if you add Mitsubishi, which has a large amount of orders from the JDA, and furthermore, Toshiba and Oki Electrical to this NEC group, it will mean a union of all those companies with proven track records in relations with the JDA. This seems, does it not, to have placed Fujitsu and Hitachi, which are latecomers in dealing with the JDA, in a difficult position."

Performance specifications are an explanation of what performance the JDA wants in the BADGE-X system. Fujitsu, Hitachi, and NEC will read the perfroamance specifications, which are said to stack up one meter high, and then they will present within six months a "proposal" which would meet these specifications. That would be the end of January of next year.

The JDA will look over the proposals of the companies and will make its decision on BADGE-X by the time next summer that the preliminary budget requests for FY 1983 are to be drawn up. Delivery of the system is to be in FY 1987.

The corporate battle over BADGE-X, which is to be the nucleus of Japan's defense system, should really be starting in earnest now, but the formation of the "six-company alliance" around NEC and Mitsubishi will influence greatly the outcome of this battle.

Toshihiko Saijo, former chief of the Communications Section of the JDA's Equipment Bureau, and now executive director of NEC, had this to say about the formation of the six-company alliance: "We are handling now the present BADGE system jointly wit the Hughes Corporation; in May of 1979, we set up an Office of Special Integrated Systems where we have been dealing with BADGE-X ever since. In the case of BADGE-X, it was our view that what could be produced in Japan should be produced in Japan, and that Japan's air defense system had to be the optimum system. In order to produce the optimum system, therefore, we thought that it would be best to have companies with experience in each of the fields join together and combine their strengths. When you think about it, the combining of these six companies is an 'inspiration'".

In actuality, JDA orders for electronic equipment placed with NEC, Mitsubishi, Toshiba, and Oki Electrical together make up two-thirds of the total orders for such equipment.

According to the JDA-produced ranking of companies by procurement totals for FY 1980, the top 10 companies, from first to tenth, were: (1) Mitsubishi Heavy Industries, Ltd. (234.5 billion yen); (2) Ishikawajima-Harima Heavy Industries Co., Ltd. (108.4 billion); (3) Kawasaki Heavy Industries, Ltd. (81.2 billion); (4) Mitsubishi Electric (72.3 billion); (5) Toshiba Corporation (32.9 billion); (6) NEC (22.3 billion); (7) Ito Chu Aviation (14 billion); (8) Nippon Oil Co., Ltd. (12.9 billion); (9) The Japan Steel Works, Ltd. (12.2 billion), and (10) Sumitomo Shipbuilding and Machinery Co., Ltd. (12 billion).

The reality of the "six-company alliance" is that the fourth, fifth, and sixth-ranked companies have joined forces. Furthermore, these three have been joined by the Hughes Corporation, the company with the best record in the world with BADGE systems, having received orders for 20 systems and having 12 systems in operation. Fujitsu and Hitachi are saying that they also "will do their utmost to obtain the contract," but the view that "the six-company alliance already has the decision sewn up" is gaining currency within defense industry circles.

The decision to unite NEC and Mitsubishi Electric, one which will have a great impact on the fight over BADGE-X, was made ultimately in a high-level meeting at the end of July between Takeshi Kawahaski, Vice President of NEC, and Koji Imakita, Vice President of Mitsubishi.

NEC called for such a union in the middle of July, and the formation of a six-company alliance centered on NEC and Mitsubishi was arranged quickly within the short span of two weeks.

The "Top Secret" Performance Specifications

BADGE is an acronym for "Base Air Defense Ground Environment."

Put simply, BADGE is a system which uses computers to distinguish instantly whether flying objects caught on the 28 radar sites throughout the country are friendly aircraft, commercial aircraft, or unidentified aircraft, and in the case of an unidentified aircraft, to decide immediately, on the basis of that aircraft's flight path and the location of friendly aircraft, how it should be intercepted.

The commander will decide whether or not a scramble will take place; however, BADGE will guide an intercepter to the enemy aircraft and will give a command to missle on the ground to intercept the enemy.

The nerve center of the existing BADGE system is located within the Air Defense Command at Fuchu near Tokyo.

The decision to introduce the existing system was made in 1963, some 18 years ago. Equipment acquisition was completed in 1967, and the system went into operation in 1968 after a one-year test period.

The corporate battle over this BADGE system involved a three-way struggle between three groups: The General Electric, Toshiba, and Mitsui and Co., Ltd. group; the Litton, Mitsubishi Electric, Fujitsu, and Nissho-Iwai Co. group; and the Hughes, NEC, and C. Itoh and Co. group. Ultimately, the Hughes system was selected. During this fight, however, Colonel Kenkici Kawasaki, Chief of the Defense Section of the Air Staff Office, was arrested for "revealing secrets," and his superior, General Hifumi Yamaguchi, committed suicide.

It will be almost 20 years since the decision was made to introduce the present BADGE system; electronic equipment has made incredible progress over these years, and the advances in aircraft have been astounding as well. In addition, the "MIG incident" of five years ago, which involved Lt. Belenko, revealed the system to be defective in that it could not catch aircraft intruding at a low altitude.

It was clear by then that an improvement in the system could not be avoided. In its Medium-term Defense Buildup Estimate drawn up in 1978, the JDA discussed BADGE-X; it then spent the next two years working on writing up the performance specifications.

Having learned from the experience of the tremendous corporate struggle over the present BADGE system, the JDA has avoided all contact with private business and has carried out its work with great circumspection. The manufacturers, for their part, have welcomed into their firms a large number of ex-JDA officials and officers and have strived to build pipelines into the JDA. They have been trying to discover what the JDA will require in the way of performance specifications.

The performance specifications which the JDA presented to Fujitsu, Hitachi, and NEC on 7 August are said to stand more than one meter in height; their contents are top secret.

At present, the three companies are studying the contents in great detail, and they are keeping silent as to what has been asked of them.

In the light of past history, however, these specifications apparently emphasize improving the ability to respond to and to handle intruders and increasing computer capacity. Also, the new system is supposed to be able to link up with the early warning aircraft, the E2C, with which the existing system is not linked, and to be able also to deal with low-flying intrurers which cannot be caught on radar.

The existing BADGE system cost a total of 25 billion yen, but BADGE-X, because of the increase in the fuctions and the system, is expected to cost from 200 to 300 billion yen.

The Grand Alliance Formed by NEC.

Even within the are of electronics, which is considered to be advanced technology, that involving defense and space requires particularly advanced technology. Working on BADGE-X would be a tremendous plus for a company because it would help to develop technological ability.

Because of this very fact, therefore, the domestic computer manufacturing companies began very early to gear up for the struggle to become the prime contractor for BADGE-X. NEC, which is handling the existing system, created a "Defense Business Division" last year on the heels of its "Office of Special Integrated Systems."

Mitsubishi Electric established a new "Office for Defense Systems Projects" in November of last year. In December of 1979, Fujitsu inaugurated its "Office of Defense Equipment;" and in January of this year, it set up a subsidiary company, called the "Fujitsu Systems Comprehensive Research Institute," for the purpose of defense-related R and D. Fujitsu Vice President Taiichiro Shin was appointed President of the new company.

In the case of Hitachi, and "Office for the Promotion of Defense Technology" was created in August of 1980.

Toshiba, on the other hand, has not created any special organization, but it claims to have "developed an organizational system which can respond to any situation."

Although each company argued that it alone should be the prime contractor, all realized that, because of the scale of BADGE-X and because it was a system requiring special defense-related know-how, it would be difficult for one company to handle it all alone.

Therefore, from the beginning of this year, and as the time for the presentation of performance specifications drew near, rumors began to circulate that Mitsubishi Electric and Fujitsu were going to join hands, or that Fujitsu and Hitachi were going to join hands.

However, the idea of NEC and Mitsubishi joining together was never considered. It was strongly believed that, in the light of past experience, the fight over BADGE-X would be between these two companies, NEC and Mitsubishi Electric.

At the working-level, however, there was an awareness of the merits of a union between NEC and Mitsubishi.

In the middle of July, therefore, NEC suggested to Mitsubishi that they join hands together in a formal alliance.

The Kawahashi-Imakita Meeting and a Decision

When Mitsubishi Electric received the proposal from NEC, it was acknowledged by both President Nichahiro Katayama and Chairman Sadakazu Shindo. Then at the end of July, somewhere in the city, Vice President Koji Imakita, the man in charge of defense equipment, met with NEC's Vice President Takeshi Kawahashi.

According to the accounts of those involved, this high-level meeting between the two vice presidents resulted in a decision that "there are few areas in which NEC and Mitsubishi Electric compete with each other, and that in order to make the best system possible for BADGE-X, which has such great importance for Japan's defense, we should cooperate together in doing it."

Actually, NEC not only is involved in the present BADGE system, but has experience in telecommunications as well. As for Mitsubishi, it is involved in radar, missiles, and the fire control mechanism for the F15 jet fighter. If the two companies were to join hands, a better system could be made than if they tried to do it separately. This truth was also affirmed at the meeting that day. Furthermore, it was agreed that, in order to make the optimum system, Toshiba and Oki Electrical, which have experience in defense-related matters, would be invited to join the group.

Toshiba has a cooperative relationship with NEC in the area of computers, and Oki Electrical in the past has engaged in the joint development of computers with Mitsubishi Electric. Even now, Oki Electrical has a close relationship in the area of peripheral terminal equipment. These relationships were very useful for getting the companies together.

There were some voices within Mitsubishi urging the company to try and obtain the contract on its own; ultimately, however, it joined hands with NEC in order to make the best system possible.

At the same time that NEC decided to join with Mitsubishi, it also asked Toshiba, with which it had a cooperative relationship in computers, and Oki Electrical, which had a close relationship with Mitsubishi, to joing the group.

Toshiba and Oki Electrical both said that they wanted to try and become the prime contractor on their own; in truth, though, they both wanted to link up with somebody else. Therefore, NEC's proposal for a union was truly the answer to their prayers.

Four domestic computer companies experienced in defense-related electronic equipment joined with the Hughes Corporation and Japan Avionics to form a six-company alliance. This was the result also of the shrewd calculations of NEC which, in addition to working on the present BADGE system, wanted very much to be involved in BADGE-X.

In order for NEC to become the prime contractor for BADGE-X, it had first to construct an unbeatable organization so as to be able to turn away the latecomers, Fujitsu and Hitachi. Therefore, it brought Mitsubishi Electric and Toshiba, which have proven track records in defense-related matters, into its own camp and formed a grand alliance.

Mitsubishi and Toshiba responded to NEC's proposal because they calculated that their participation in BADGE-X could be obtained more certainly by such a move. The corporate battle over BADGE-X has only just begun, and there is little doubt that the attacks from Fujitsu and Hitachi will surely come. With the formation of the "six-company alliance," however, one can say that the response to these attacks has already appeared.

9844
CSO: 4105/236

WHITE PAPER ON COMMUNICATIONS ISSUED

OW270349 Tokyo KYODO in English 0327 GMT 27 Nov 81

[Text] Tokyo Nov 27 KYODO--This year's white paper on communications proposed Friday to introduce communications satellite technology into anti-disaster measures in an emergency.

Posts and Telecommunications Minister Ichiro Yamanouchi presented the report on communications for fiscal 1981 before a cabinet meeting Friday and the report was approved.

The annual report also proposed to study connecting communication networks of the National Land Agency, the Construction Ministry and the Fire Defense Agency to make them useful in the event of an emergency.

The report on the main theme "Disaster and Communications" described communication media in recent years as "the central nerve in the society" which has permeated through social and family life as well as business activities.

The report mentioned countermeasures against disasters by means of various communication media such as data communications, telephone, television and radio, in view of their respective characteristics.

In the case of international communications, the ministry plans to set up central stations in Tokyo and Osaka to divide operating functions and to build a central station in Oyama, Tochigi Prefecture, northeast of Tokyo, to start operation in 1985, the report said.

The ministry is also doubling communication transmission routes from the present single route for both international and domestic communications, it said.

It also said a system to regulate general telephone service has been developed for smooth telephone communications for rescue and restoration activities in an emergency.

The Japan Broadcasting Corporation (NHK) and other broadcasting stations have proceeded with disposition of mobile broadcasting installations and the police now have a nationwide shortwave communication network as well as their own communication circuits.

The Japan National Railways (JNR) also introduced a shortwave wireless circuit and has been going toward making the circuit microwave in line with electrification of railways, the report said.

The ministry is also developing an "urgent broadcast system" in which televisions and radios are automatically switched on to give people forecasts and warnings against emergency.

Private corporations are going on doubling computer circuits from the present single circuit and decentralizing date files against a computer accident.

The report also added mails totaled 15.7 billion letters in fiscal 1980, up 3.1 percent over the previous year, subscribed telephones about 39 million, up 3.4 percent, and subscribed television viewers 29.2 million, up 1.1 percent.

CSO: 4120/71

MDC/FOKKER EXECUTIVES ARRIVE IN COUNTRY

Tokyo JPE AVIATION REPORT-WEEKLY in English No 546, 11 Nov 81 pp 2-3

[Text]

Executives of McDonnell Douglas Corp. (MDC) and Fokker arrived in Japan in late October to brief Japanese aircraft industry representatives on details of the MDF-100, which they have proposed as Japan's Y-XX 150-seat-class transport aircraft for joint development.

The executives, including Vice President Jerald D. Burns of MDC's Douglas Aircraft Co. Division, were to meet with Yoshihiro Sakamoto, Chief of the Aircraft and Ordnance Division, Machinery and Information Industries Bureau, Ministry of International Trade and Industry, and officials of Civil Transport Development Corp., Mitsubishi Heavy Industries Ltd., Kawasaki Heavy Industries Ltd., Fuji Heavy Industries Ltd. and aircraft engine manufacturers.

The MDF-100 proposal was made when MDC Chairman Sanford N. McDonnell and Fokker Chairman Frans Swarttouw held talks with Japanese government and industry representatives concerned in Tokyo early last August. Since then, a special committee on the Y-XX of the Society of Japanese Aerospace Companies (SJAC), has been considering the proposal together with Boeing Co.'s 7-7 and Airbus Industrie's A320 proposals for the Y-XX to select a partner from the proposals for joint development of the new commercial transport.

To further look into the proposals, the SJAC special committee sent members of its working group to the United States for talks with Boeing and MDC/Fokker representatives in early October. Their meeting with MDC/Fokker representatives took place in Long Beach Oct. 6-7.

At follow-up talks with the Japanese in Tokyo, the MDC/Fokker executives were expected to touch upon a possible specific business arrangement for joint development of the MDF-100 with Japan and a survey on a possible world market for the new aircraft.

CSO: 4120/72

KHI NAMED CONTRACTOR FOR C-130H AIRFRAME OVERHAUL

Tokyo JPE AVIATION REPORT-WEEKLY in English No 546, 11 Nov 81 pp 3-4

[Text]

The Japanese Defense Agency (JDA) has named Kawasaki Heavy Industries Ltd. (KHI) as contractor to overhaul the airframe of the Lockheed C-130H tactical transport aircraft which the Air Self-Defense Force (ASDF) will acquire in FY 1983.

KHI had been competing with Shin Meiwa Industry Co. and Japan Aircraft Mfg. Co. (NIPPI) for the C-130H airframe overhaul contract. On the reasons for KHI's victory, informed sources said KHI had offered the lowest overhauling costs because it had readied sufficient overhaul equipment.

KHI has also undertaken maintenance of the C-1 jet transport for the ASDF.

The JDA has also named contractors for overhauling six other C-130H component parts. They are Ishikawajima-Harima Heavy Industries Co. for the Allison T-56-A-15 engine and the Bendix 6893609 gas turbine engine control system, Sumitomo Precision Products Co. for the Hamilton 54H60-117 propeller, Toshiba Corp. for the Litton LTN-72R inertial navigation system, and Tokyo Aircraft Instrument Co. for the Collins AP-105V auto pilot system and the Collins FD-109 flight director. Contractors for other parts will be selected in the future.

CSO: 4120/72

KHI LAUNCHES MT-X DEVELOPMENT

Tokyo JPE AVIATION REPORT-WEEKLY in English No 546, 11 Nov 81 pp 4-5

[Text]

Kawasaki Heavy Industries Ltd. (KHI) launched the development of the MT-X new intermediate trainer for the Air Self-Defense Force (ASDF) soon after a ¥1,590 million contract was concluded between the company and the Defense Agency's Central Procurement Office for a basic MT-X design in late October.

KHI was named prime contractor for the MT-X development and production program early last September. Mitsubishi Heavy Industries Ltd. (MHI) and Fuji Heavy Industries Ltd. (FHI) were appointed subcontractors to cooperate with KHI in the program.

The conclusion of the basic design contract was delayed somewhat because negotiations between KHI and the agency took more time than expected, due to KHI's original contract value estimate exceeding ¥1,596 million as earmarked in the FY 1981 budget. Actually, the contract value was about ¥8 million less than the budgeted amount. The contract calls for KHI to complete the basic design work by the end of October 1982.

The work on the MT-X basic design has been undertaken by an MT-X engineering team at KHI's Gifu Works in central Japan. It consists of 98 engineers -- 46 from KHI, 23 from MHI and 29 from FHI. KHI's Hirotaka Isozaki has been named chief engineer, and MHI's Tomoharu Shibata and FHI's Masaomi Kadoya the deputy chief engineers.

The team is divided into seven groups -- planning (eight engineers from KHI and two from FHI), cost control (two from KHI, one from MHI and two from FHI), aerodynamics (five from KHI, four from MHI and three from FHI), structure I (six from KHI, two from MHI and seven from FHI), structure II (four from KHI, six from MHI and five from FHI), equipment (six from KHI, five from MHI and four from FHI), and avionics (three from KHI, one from MHI and three from FHI). The number of team members will increase to about 120 at the peak of the work period in the next fiscal year.

KHI has also appointed Masahiko Iwata, Director and assistant general manager of Aircraft Manufacturing Division, as MT-X program manager. Toshio Hiraki, deputy director of the Aircraft Technology Department, and two others have been named assistant program managers. Furthermore, Sadaaki Fujisaki and three others have been named to form a support group for the engineering team.

The basic design work will be followed by detailed design work and fabrication of prototype aircraft. Overall MT-X development work is expected to be completed by FY 1987. The ASDF plans to procure about 200 of the new trainers replacing the T-33As and T-1As/Bs.

The ASDF's major MT-X requirements are maximum speed at 500 knots at sea level and Mach 0.9 at an appropriate training altitude, maximum climb rate at about 10,000 feet over the sea, maximum flight altitude at 40,000 feet, maximum flight range at 700 nautical miles, maximum landing speed at 90 knots, maximum takeoff distance at 2,700 feet, maximum landing distance at 2,500 feet and total weight of 5.5 tons.

CSO: 4120/72

JDA TO NEGOTIATE XF-3 CONTRACT WITH IHI

Tokyo JPE AVIATION REPORT-WEEKLY in English No 546, 11 Nov 81 pp 5-6

[Text]

The JDA will start negotiations with Ishikawajima-Harima Heavy Industries Co. (IHI) soon on a contract for fabrication of four final test prototypes of the XF-3-30 small turbofan engine designed for the ASDF's MT-X new intermediate trainer, since KHI has launched the MT-X development program.

The negotiations may center on the contract value. The XF-3-30's performance has been given a high rating. The only problem with adoption of the engine for the MT-X may be the price.

The contract, if successfully concluded, would virtually close the door to adoption of the SNECMA/Turbomeca Larzac, a rival of the XF-3-30, for the MT-X engine.

The JDA has already received five XF-3-30 development engines from IHI for tests to explore the possibility of the engine being installed for normal use on aircraft. The first engine was delivered in late October. The XF-3-30 is an improved version of the XF-3, which was developed with 700 hours of running tests since completion of the XF-3 first-phase engine in March 1976.

IHI plans further improvement for the four final test engines covered by the coming contract. Low cost material will be used with performance remaining high to reduce the engine's price close to an international level as requested by the JDA.

Average international price for such a small turbofan engine is estimated at Y150 million per unit, according to Japanese industry sources. Although the Larzac, developed before the 1973 oil crisis, was originally quoted at around Y110 million, the price is believed to have risen to the estimated international level.

IHI has done its utmost to reduce the XF-3-30's price despite rapid inflation following the oil crisis. But the ¥4,500 million previous XF-3-30 contract, setting the engine price at ¥900 million per unit, indicated that a production version of the XF-3 could be priced at ¥300 to 500 million without further cost reduction efforts.

The test engine for the coming contract will be priced lower than that for the previous one. The possible value of the new contract for the four test engines may be between ¥3,000 million and ¥3,500 million.

CSO: 4120/72

KOMATSU PICKED AS PRIME CONTRACTOR FOR 203MM HSP

Tokyo JPE AVIATION REPORT-WEEKLY in English No 546, 11 Nov 81 pp 6-7

[Text]

The JDA has picked Komatsu Ltd. as prime contractor for license production of the U.S. Army M110A2, 203mm self-propelled howitzer (HSP) for the Ground Self-Defense Force (GSDF). A formal contract will be signed by the end of March 1982.

Komatsu vied with Mitsubishi Heavy Industries Ltd. (MHI) for the prime contract. The JDA's selection of Komatsu resulted from its coordination of the two firms' shares in production of GSDF equipment. So far, contracts for production of tanks and other major GSDF fighting equipment have been awarded to MHI.

Komatsu as prime contractor will undertake production of the 203mm HSP chassis and assembly of the full system. The turret will be manufactured by Japan Steel Works Ltd. while the gun barrel and engine will be imported from the United States.

MHI and Hitachi Ltd. are expected to take part in Komatsu's manufacture of the chassis. MHI may take charge of the hydraulic system and Hitachi the power transmission.

The GSDF has been authorized to procure six of the 203mm HSPs for training purposes under the FY 1981 (April 1981-March 1982) budget. It has sought 12 units in the FY 1982 budget request.

CSO: 4120/72

TR&DI PLANS AIRBORNE XF-3-30 TESTS FOR JUNE 1982

Tokyo JPE AVIATION REPORT-WEEKLY in English No 546, 11 Nov 81 pp 8-9

[Text]

The JDA's Technical R&D Institute (TR&DI) plans airborne tests of the XF-3-30 small turbofan engine in June 1982 on a modified C-1 transport aircraft as a flying test bed, to be completed by KHI for delivery to the TR&DI in mid-January.

The XF-3-30 engine is now in development by IHI as a possible candidate for the engine of the MT-X new intermediate trainer for the ASDF. Its airborne tests will include reignition. The engine will also undergo ground fatigue tests and high-altitude performance tests using U.S. facilities.

The C-1 flying test bed is designed for flight tests of electronic aircraft components and missiles as well as engines. It will replace the C-46 which has so far tested the J-3 engine and electronic systems.

The aircraft will have a pylon to accommodate the engine or other components for airborne tests outside the airframe. It will also be equipped with racks for measuring instruments and test systems.

CSO: 4120/72

MITI, INDUSTRY HAGGLING OVER Y-XX PARTNER

Tokyo JPE AVIATION REPORT-WEEKLY in English No 547, 18 Nov 81 pp 1-2

[Text]

The Ministry of International Trade and Industry (MITI) and the aircraft industry are haggling over the selection of a foreign partner for the industry's development of the Y-XX 150-seat-class commercial transport aircraft.

MITI wants to select the partner within this year, while the industry intends to avoid any hasty selection in consideration of uncertainties about the Y-XX project.

The ministry has earmarked ¥350 million in the FY 1981 (April 1981-March 1982) budget to subsidize the industry's work on a preliminary Y-XX design, planning to raise subsidies corresponding to about 50 percent of costs for the Y-XX development program as is the case with Japan's joint development of the Boeing 767 (Y-X) with the Boeing Co. and Italy. MITI has also sought ¥1,500 million of subsidies in its FY 1982 budget request for starting the industry's joint preliminary design work with a foreign partner in the next fiscal year. Therefore, MITI insists that the industry should select the foreign partner and exchange memoranda of understanding by the end of this year.

The industry had also intended to settle the selection within this year. But it has become cautious of hastening the matter, since it is the key factor for the success of the Y-XX project, estimated to cost more than ¥300,000 million. In case Japan takes a 20 percent share of the project, it would have to put up more than ¥60,000 million. Although half of the amount may be covered by government subsidies, the industry would have to shoulder about ¥50,000 million for investment in plant and equipment. This estimate has led the industry to exercise prudence in making a decision on the selection.

Candidates for the Y-XX partner are the Boeing Co., McDonnell Douglas Corp. and Fokker, and Airbus Industrie. The Japanese industry has promoted consideration of the three candidates' proposals for the Y-XX project. But an industry leader said Japan does not have to hasten the selection because these proposals have yet to take definite shape.

Three industry leaders -- Gakuji Moriya, consultant to Mitsubishi Heavy Industries Ltd., Zenji Umeda, Chairman of Kawasaki Heavy Industries Ltd., and Eiichi Ohara, Chairman of Fuji Heavy Industries Ltd. -- met early in November to discuss the matter. But they failed to make any decision on selection of the partner. Ohara said the industry had better start full-scale consideration of the foreign proposals after its executive mission visits the United States in mid-November.

Thus, the selection of the Y-XX partner could be delayed until the spring of 1982 or beyond. But this delay may affect the government's preparation of the FY 1982 budget. With those possible effects in mind, MITI would have to coordinate views with the industry. Attention will be focused on how the ministry will evaluate the industry's intention to delay the selection.

CSO: 4120/72

FLYING BOAT DEVELOPMENT TO COST 36.9 BILLION YEN

Tokyo JPE AVIATION REPORT-WEEKLY in English No 547, 18 Nov 81 p 2

[Text]

Japan's possible development of a flying boat is estimated to cost ¥36,900 million, according to a report prepared by the Society of Japanese Aerospace Companies (SJAC) on the basis of two years of research.

The flying boat has been recommended by the Machinery Industry Promotion Association and other research bodies as a new transport system.

The SJAC envisions the flying boat as a 30-to-50-seat amphibious plane which can take off from and land on an 800-meter onshore runway and a 1,000-meter offshore runway. The maximum wave height for the offshore runway is given as 1.5 meters. The maximum speed of the aircraft is planned at 300 to 350 knots, with a maximum flight range of 1,200 nautical miles.

The estimated development costs consist of ¥14,200 million for the airframe, ¥800 million for on-board equipment, ¥2,600 million for fatigue tests, ¥3,800 million for acquiring a type certificate, and ¥15,000 million for a shift to mass production.

The price of the flying boat is estimated at ¥2,130 million per plane for production of 100 planes, ¥1,240 million for 300 planes or ¥1,010 million for 500 planes.

Domestic sales of the flying boats are estimated to reach a level of 120 to 140 planes by FY 1990 and more than 200 planes by the year 2005.

CSO: 4120/72

MHI TO TAKE CARE OF YS-11 SUPPORT, SERVICING

Tokyo JPE AVIATION REPORT-WEEKLY in English No 547, 18 Nov 81 p 3

[Text]

Mitsubishi Heavy Industries Ltd. (MHI) has tentatively decided to take the place of Nihon Aeroplane Manufacturing Co. (NAMCO) on product support and servicing of Japan's first post war passenger aircraft, the YS-11, on the condition that accumulated losses are wiped out before the takeover, MITI and industry sources said last week.

Approximately half the 120-man work force presently employed by NAMCO will be transferred to MHI, according to present planning. The remaining 60 employees will be absorbed by the Kawasaki and Fuji heavy industrial firms at rates of 35 and 15 percent respectively.

Production of the YS-11 stopped in 1973 after 180 turboprop aircraft were produced. NAMCO has continued to support and service YS-11 operators but MITI has decided to disband the government-funded company by the end of FY 1982 (March 1983) as part of its efforts to reduce government spending.

CSO: 4120/72

NEW AIR COMBAT MISSILE TO USE HIGH TECHNOLOGY

Tokyo JPE AVIATION REPORT-WEEKLY in English No 547, 18 Nov 81 pp 7-8

[Text]

The TR&DI plans to develop a highly advanced air-to-air missile which could be superior to the Raytheon AIM-9L and AIM-9M and even the ASRAAM (advanced short-range air-to-air missile) planned for development by the North Atlantic Treaty Organization (NATO).

The TR&DI is now going ahead with technical research on the new air combat missile, named XAAM-3, at the request of the Air Self-Defense Force (ASDF). Following fabrication of a double canard wing airframe from FY 1980 to 1981, it intends to manufacture the sensor and homing sections in FY 1982 and the guidance and control section and the gas servo mechanism in FY 1983.

The new missile is required to have off-boresight capability and a wider turning angle. The double canard wing airframe is expected to widen the turning angle, while the gas servo mechanism is planned to flexibly control the direction of a missile in flight.

CSO: 4120/72

NEW 155MM HSP TO BE DEVELOPED FOR GSDF

Tokyo JPE AVIATION REPORT-WEEKLY in English No 547, 18 Nov 81 p 8

[Text]

The TR&DI will develop a new 155mm self-propelled howitzer (HSP) for the GSDF under FY 1983-87 MTDP as replacement for the existing Model 75 155mm HSP. The new HSP is expected to consist of the Model 75 155mm HSP chassis and the longer-range FH-70 gun mounted on the towed 155mm howitzer entering service in FY 1984.

The TR&DI tentatively plans to start fabrication of the new 155mm HSP in FY 1983, complete operational tests in FY 1985 and obtain a service entry certification in FY 1986. Originally, it had wanted to launch the new 155mm HSP development program in FY 1982.

The program's start could be delayed beyond FY 1983 depending on its coordination with other research and development projects for the GSDF in the fiscal year, including full-scale development of a mechanized infantry combat vehicle.

CSO: 4120/72

MELCO FABRICATES SATELLITE CONTROL SYSTEM

Tokyo JPE AVIATION REPORT-WEEKLY in English No 547, 18 Nov 81 pp 8-9

[Text]

Mitsubishi Electric Corp. (MELCO) and the Science and Technology Agency's National Aerospace Laboratory (NAL) have fabricated Japan's first prototype magnetic-bearing flywheel for three-axis attitude control of satellites, paving the way for their successful development of the new satellite attitude control system in several years.

Japan introduced a three-axis attitude control system from the United States for a test broadcast satellite launched in March 1978.

But the existing system, using ball bearings, consumes considerable electric power to spin the wheel, despite the frictional resistance of the bearings. Furthermore, its life is limited.

These problems can be overcome by the magnetic-bearing flywheel, in which the wheel is retained in air by magnets so that no frictional resistance is produced during the wheel's spin. Most of the industrialized countries are developing the new magnetic-bearing attitude control system.

The MELCO/NAL system is called the magnetic-bearing gimbal momentum wheel, consisting of a 28-centimeter-diameter wheel and a support stand. The wheel is retained in the air by two permanent magnets and an electromagnetic coil. Another electromagnet spins the wheel.

The spinning wheel can detect any inclination of the satellite. The satellite can recover a normal attitude in reaction to the wheel's gimbals.

for controlling a satellite. MELCO wants to fabricate a larger system for tests on a satellite as early as possible to set up domestic three-axis control technology.

Japan plans to launch the ETS III engineering test satellite in FY 1982, the BS II broadcasting satellite in FY 1983 and the MOS maritime observation satellite in FY 1986, all of which will use foreign three-axis control technology.

CSO: 4120/72

BRIEFS

Y-XX MARKET SURVEY IN U.S.--The Civil Transport Development Corp. (CTDC) will send three officials to the United States on Nov. 12 to study a possible U.S. market for 150-seat airliners in preparation for Japan's development of the Y-XX transport. Joined by another official in the United States, the three members of CTDC's Y-XX preparation office, including Shinji Kuse, will visit United Airlines, Delta Air Lines, American Airlines, Eastern Airlines and other U.S. carriers to discuss their technical requirements and procurement plans for 150-seat-class aircraft. The plans of United and Delta, in particular, are seen to be a key to Y-XX development. The CTDC has been given government subsidies under the FY 1981 budget to conduct a survey on the Y-XX development program. [Text] [Tokyo JPE AVIATION REPORT-WEEKLY in English No 546, 11 Nov 81 p 3]

BUSINESS JET CERTIFICATED--Japan's first business jet MU-300 developed by Mitsubishi Heavy Industries Ltd. (MHI) has been certificated by the US Federal Aviation Administration (FAA). The orders and options placed for the aircraft by American and European operators have now reached 120. Delivery of the Mitsubishi MU-300 "Diamond One" will begin in January 1982. Powered by two P&W Canada turbofans, the aircraft has accommodations for 11 passengers. It has a range of 2,850 km and a maximim speed of 803 km/h. It flies faster than its competitor, the Cessna Citation II. The "Diamond One" will be marketed for approximately $2,600,000 per aircraft. MHI has sold 712 of the MU-2, a turboprop predecessor of the MU-300, throughout the world. [Text] [Tokyo JPE AVIATION REPORT-WEEKLY in English No 547, 18 Nov 81 p 3]

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